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10/644,273	08/19/2003	Jeremy John Carroll	B-5212 621174-8	5180

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EXAMINER
WASHBURN, DANIEL C

ART UNIT	PAPER NUMBER
2628	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/644,273	CARROLL, JEREMY JOHN
	Examiner	Art Unit	
	Dan Washburn	2628	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

    4a) Of the above claim(s) *15-18 and 22-26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 19-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, namely claims 1-14 and 19-21 in the reply filed on 10/24/06 is acknowledged. The traversal is on the ground(s) that Group II claims generating a representation of an RDF graph while Group I claims processing data where the data may be an RDF graph. This is not found persuasive because Group II claims generating a representation of an RDF graph, where the representation of the RDF graph includes a plurality of blank nodes, ordering the representation, labeling a plurality of the blank nodes, and reordering the representation, while Group I describes processing data in accordance with a first, second, and third set of rules, where the data to be processed may be in the form of an RDF graph.

Group II very specifically describes generating a representation of an RDF graph, where the RDF graph includes a plurality of blank nodes, ordering the representation, labeling at least some of the blank nodes, and reordering the representation. None of these limitations are found within Group I, which describes three stages of processing data, where the data to be processed may be in the form of an RDF graph. Generating a representation of an RDF graph and ordering and reordering the nodes contained within the graph is considered separately useable when compared against generally processing data, where the data to be processed can be in the form of an RDF graph. Further, three stages of processing data, where the data to be processed may be an RDF graph, can be applied to much more than simply working with RDF graphs, which gives it separate utility when compared to Group II.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14, 19 and 21 rejected under 35 U.S.C. 101 because the claimed

invention is directed to non-statutory subject matter.

Claims 1-14, 19, and 21 read on an abstract idea, as initially defined in claims 1

and 19. For example, claim 1 describes processing data in accordance with a first set

of rules, applying the party processed data to a second set of rules, and preparing the

data to be processed by a third set of rules, but claim 1 does not describe the practical

application associated with processing the data (e.g., displaying the processed data on

a display device). Therefore the claims are directed solely at an abstract idea and do

not produce a useful result.

For claims including such excluded subject matter to be eligible, the claim must

be for a practical application of the abstract idea, law of nature, or natural phenomenon.

Diehr, 450 U.S. at 187, 209 USPQ at 8 ("application of a law of nature or mathematical

formula to a known structure or process may well be deserving of patent protection.");

Benson, 409 U.S. at 71, 175 USPQ at 676 (rejecting formula claim because it "has no

substantial practical application").

To satisfy section 101 requirements, the claim must be for a practical application

of the § 101 judicial exception, which can be identified in various ways:

- The claimed invention "transforms" an article or physical object to a different state or thing.

- The claimed invention otherwise produces a useful, concrete and tangible result.

Further, claim 19 describes a computer program, which is considered a data structure. Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing a functional change in the computer. See, e.g. Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. The preamble of the claim should describe a computer readable medium encoded with a computer program, the computer program containing a set of instructions that when executed by a computer, cause the computer to carry out the method described by the body of the claim.

Still further, claim 21 describes that the computer program is carried on an electrical carrier signal, which does not fall into one of the four statutory categories of invention.

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.

First, a claimed signal is clearly not a "process" under § 101 because it is not a series of steps. The other three § 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents § 1.02 (1994). The three product classes have traditionally required physical structure or material.

"The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. (15 How.) 252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-flops and computers are referred to in computer science as sequential machines. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine

A "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." Shell

Development Co. v. Watson, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C.

1957), aff'd, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not

matter, but a form of energy, and therefore is not a composition of matter.

The Supreme Court has read the term "manufacture" in accordance with its

dictionary definition to mean "the production of articles for use from raw or prepared

materials by giving to these materials new forms, qualities, properties, or combinations,

whether by hand-labor or by machinery." Diamond v. Chakrabarty, 447 U.S. 303, 308,

206 USPQ 193, 196-97 (1980) (quoting American Fruit Growers, Inc. v. Brogdex Co.,

283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the Century Dictionary).

Other courts have applied similar definitions. See American Disappearing Bed Co. v.

Arnaelsteen, 182 F. 324, 325 (9th Cir. 1910), cert. denied, 220 U.S. 622 (1911). These

definitions require physical substance, which a claimed signal does not have. Congress

can be presumed to be aware of an administrative or judicial interpretation of a statute

and to adopt that interpretation when it re-enacts a statute without change. Lorillard v.

Pons, 434 U.S. 575, 580 (1978). Thus, Congress must be presumed to have been

aware of the interpretation of manufacture in American Fruit Growers when it passed

the 1952 Patent Act.

A manufacture is also defined as the residual class of product. 1 Chisum, §

1.02[3] (citing W. Robinson, The Law of Patents for Useful Inventions 270 (1890)).

A product is a tangible physical article or object, some form of matter, which a

signal is not. That the other two product classes, machine and composition of matter,

require physical matter is evidence that a manufacture was also intended to require

physical matter. A signal, a form of energy, does not fall within either of the two

definitions of manufacture. Thus, a signal does not fall within one of the four statutory

classes of § 101.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12, 14, and 19-21 are rejected under 35 U.S.C. 102(b) as being

anticipated by Britton et al. (US 6,856,992).

As to claims 1 and 19, Britton describes a method and a computer program

comprising instructions that, when loaded onto a computer, cause the computer to

process data by: processing data in accordance with a first set of rules, which operate,

inter alia to define a stage at which such a processing operation ceases (column 2 lines

1-22, column 4 lines 36-49, and Figure 1 describe connectors 108. Connectors 108

translate between a native language of a respective database that each connector is in

communication with and an internal language of the described enterprise business

visibility and insight system 100. The internal language of the system 100 uses

resource description framework (RDF) syntax. Translating between a native language

of the respective database systems and the internal language of the system 100 is

considered processing data in accordance with a first set of rules (in this case language

translation rules), which operate inter alia to define a stage at which such a processing

operation ceases (the data is translated until all relevant data has been translated into

the new language); applying to the party-processed data a second set of rules, which

operate to modify the data, so that the modified data may be processed in accordance

with a third set of rules (column 2 lines 23-39, column 2 lines 66-67, and column 3 lines

1-11 describes that the framework server 116 accesses the data in data store 114 and

presents the data in the form of an RDF graph. Column 9 lines 4-12 describes that a

user can modify the data stored in the data store 114, which results in the modification

of data stored in the respective legacy database 140. Changes are made to the data

displayed by the browser 118 and these changes are transmitted back to the data store

114, which uses the connectors 108 to translate the language back to the native

language of the respective legacy database 140. A user editing the RDF graph is

considered applying to the party processed data a second set of rules, which operate to

modify the data, and the modified data can be translated back into the native language

of the database that the data originated from using the connectors 108, which is

considered modified data that may be processed in accordance with a third set of rules

(where the third set of rules is the translation back to the legacy database's native

language)).

Regarding claim 2, Britton describes a method wherein the first and third sets of

rules are the same (column 4 lines 36-49 describes that connectors translate between

the API of the legacy databases 140 and a language/protocol common to the

connectors 108, the holographic data store 114, and the framework server 116. The

system translating between the API of the legacy databases 140 and the language

common to the connectors 108, the holographic data store 114, and the framework

server 116 is considered processing the data in accordance with a first set of rules.

Likewise, the system translating back from the language common to the connectors

108, the holographic data store 114, and the framework server 116 to the API of the

legacy databases 140 is considered processing the data in accordance with a third set

of rules. The first and third sets of rules are both language translation rules for

interfacing between two programming languages, therefore the first and third sets of

rules are considered the same).

Concerning claim 3, Britton describes a method wherein the modification in

accordance with the second set of rules modifies the data in a significant manner

(column 8 lines 13-27 describes that the system generates an RDF graph and presents

the graph to a user. Column 9 lines 4-12 describes that a user can modify the RDF

triples presented in the RDF graph. A user modifying the RDF triples contained within

the RDF graph is considered a user modifying the data in accordance with the second

set of rules in a significant manner).

With regard to claim 4, Britton describes a method wherein the first and third set

of rules do not modify the data in a significant manner (column 4 lines 36-49 describe

connectors 108, which translate between the native language of legacy databases 140

and the internal language of the connectors 108, holographic data store 114, and

framework server 116 (considered system 100). The translation from legacy databases

140 to system 100 involves transforming the data in the message into an RDF triple

form suitable for the data store 114. Likewise, the translation from the system 100 to

the legacy databases 140 involves converting the RDF triple into a form suitable for the

legacy database 140 (the form depends on the legacy database protocol used), as

described in column 5 lines 7-26. Converting the data into an RDF triple or converting

the data from an RDF triple into a form suitable for the target database is considered a

first and third set of rules that do not modify the data in a significant manner).

As to claim 5, Britton describes a method wherein the data is graphically

represented data (column 8 lines 13-27 describe that the data store 114 includes a

graph generator for graphically representing RDF triples as a directed graph in

response to queries from the framework server 116).

Regarding claim 6, Britton describes a method wherein the data is an RDF graph

(column 8 lines 13-27 describes that the data store 114 generates directed graphs using

RDF triples, which is considered graphically represented data that is an RDF graph).

Concerning claim 7, Britton describes a method wherein the first set of rules

perform a deterministic modification of the data (column 5 lines 14-26 describe the

process of translating a message from a legacy database into a protocol that is

understood by system 100, which is considered processing the data in accordance with

a first set of rules. The translation of the same message is the same every time it is

translated, therefore the first set of rules perform a deterministic modification of the

data).

With regard to claim 8, Britton describes a method wherein the significant

modifications include the deletion of significant data (column 9 lines 4-12 describes that

a user can modify the RDF triples presented in the RDF graph, which is considered to

include deletion of part or all of each RDF triple).

As to claim 9, Britton describes a method wherein the significant modifications

include the addition of significant data (column 9 lines 4-12 describes that a user can

modify the RDF triples presented in the RDF graph, which is considered to include the

addition or update of RDF triples on the graph).

Regarding claim 10, Britton describes a method wherein the significant additions

are distinguishable from data which is, prior to performance of any modifications,

significant (column 9 lines 4-12 describes that a user can modify the RDF triples

presented in the RDF graph (the RDF triples are considered significant data). Any

changes to the graph are transferred all the way back to the legacy databases 140 so

that the databases can update their respective stores. Which means any changes

made to the RDF triples presented on the display set a flag in the system which

indicates that the RDF triple data needs to be updated in the associated database.

Changes made to the RDF triples are considered significant additions to the RDF graph,

and the system distinguishes these additions from the rest of the RDF triples in order to

ensure that these additions are properly updated throughout the system and in any

associated databases. Therefore the significant additions are distinguishable from data

which is, prior to performance of any modifications, significant).

Concerning claim 11, Britton describes a method wherein the data describes an

ontology (column 5 lines 55-67 and column 6 lines 1-3 describes that the data store 114

stores the data from the legacy databases 140 in object-predicate-subject form, e.g.,

RDF triples. The RDF triples are considered a standard way to describe a large set of

data; therefore, the data is considered to describe an ontology).

With regard to claim 12, Britton describes a method further comprising the step of

processing the data in accordance with the third set of rules (column 9 lines 4-12

describes that if changes are made to the RDF graph presented to the user these

changes are transmitted to the data store 114 and the changes are forwarded to the

respective legacy databases 140, which utilize the corresponding API to update their

respective stores. The connectors 108 (see Figure 1) translating the modified RDF data

into programming language native to the legacy database is considered processing the

data in accordance with the third set of rules).

As to claim 14, Britton describes a method wherein reapplying the method of

claim 1 to data processed in accordance with such a method does not result in any

further modification of the data (column 4 lines 36-49 describe that the connectors 108

translate the language of the legacy databases 140 into the language/protocol of the

system 100 (see Figure 1) and then translate the language/protocol of the system 100

back into the language of the legacy databases 140. Therefore the first and third sets of

rules can be applied many times without causing modification of the data. Column 9

lines 4-12 describes that a user can update the data stored in the data store 114 by

altering the data displayed by the browser 118. Once the data is updated the updated

data is sent back to the legacy database(s) it originated from in order to update the

legacy database(s). The first time the method is applied all out of date data is updated,

but if the method is reapplied and all the data is up to date, no further modification of the

data occurs because nothing requires updating. The process of only updating the data

when it is out of date is considered a method wherein reapplying the method of claim 1

to data processed in accordance with such a method does not result in any further

modification of the data).

Regarding claim 20, Britton describes a computer program according to claim 19

embodied on a computer readable medium (column 4 lines 4-13 describes that software

connectors 108 may reside on any digital data processing systems that are in

communications coupling with respective legacy databases 140. The software

connectors 108 residing on a data processing system is considered the computer

program according to claim 19 embodied on a computer readable medium).

Concerning claim 21, Britton describes a computer program according to claim

19 carried on an electrical carrier signal (column 4 lines 14-24 describes that general or

specific purpose connector modules can be electronically downloaded or otherwise

remotely updated as required. Downloading connector modules is considered the

computer program according to claim 19 carried on an electrical carrier signal).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Britton

et al. (US 6,856,992) in view of Stanko (US 2005/0074126).

With regard to claim 13, Britton describes that when data is stored to data store 114 the system utilizes a Web Distributed Authoring and Versioning (WebDAV) interface to allow documents to be added, updated, and deleted from the database using secure WebDAV client tools. The WebDAV security system is utilized to preserve data integrity and protect enterprise business data from unauthorized access (column 7 lines 56-67 and column 8 lines 1-5).

Britton doesn't describe a method further comprising the step, subsequent to the processing of the data in accordance with the third set of rules, of writing or verifying a digital signature establishing authenticity of the data.

However, Stanko describes a secure server that only grants access to requesting clients if the requesting clients are able to generate a digital signature using a private key of the authentication server. The secure server verifies the digital signature by using a public key corresponding to the private key of the server, if the private key is correct then the server grants the client access (paragraph 0016). It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Britton the method of verifying the authenticity of a source of data, using a digital signature, before granting access to information stored at a remote location, as taught by Stanko, in order to preserve data integrity and protect enterprise business data that is stored in the legacy databases from unauthorized access. The advantage of verifying the authenticity of software that is requesting access to the legacy databases is that it ensures that the data stored in the legacy databases is always from a valid source,

which helps to prevent corrupt or otherwise incorrect data from being stored in the

database.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Britton et al. (US 7,058,637) offers another disclosure of a

method and apparatus for enterprise application integration and Bigwood et al. (US

2003/0208499) and Greenblatt et al. (US 6,954,749) both describe a method and

apparatus for generating RDF graphs.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dan Washburn whose telephone number is (571) 272-

5551. The examiner can normally be reached on Monday through Friday 8:30 a.m. to

5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ulka Chauhan can be reached on (571) 272-7782. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DW

11/14/06

ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER